Disease Management:
Using a Systematic Approach to
Improve Care

Stacey Duncan-Jackson, RN, BSN, MPA
Director, QI Programs
Institute for Health Care Studies
Michigan State University

MICHIGAN STATE
U N I V E R S I T Y

Purpose

➢ Define disease management

➢ Discuss the rationale for employing a disease management or "condition management" approach

➢ Review disease management models and key elements of disease management programs

➢ Apply disease management management principles using specific examples

MICHIGAN STATE
U N I V E R S I T Y

What is disease management?

A *system* of coordinated healthcare interventions and communications for *populations* with conditions in which patient self-care efforts are significant.

(Source: Disease Management Association of America, 2004)

MICHIGAN STATE
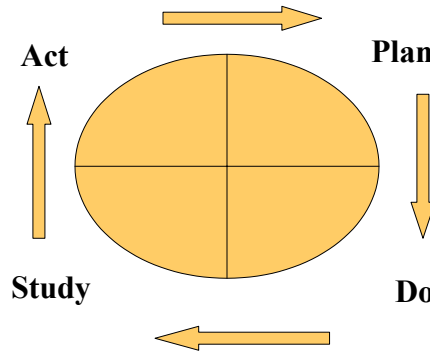U N I V E R S I T Y

Disease management

Is:
- Population-based
- Systematic
- Data-driven
- A specific application of the QI process (PDSA)

Is not:
- Case management
- Utilization Management
- Health Education
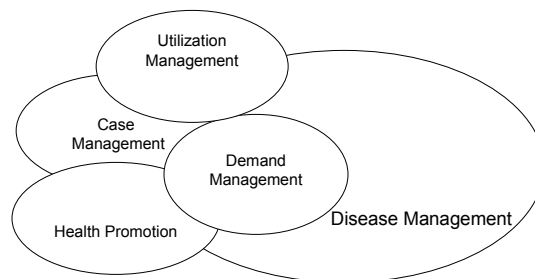- "Traditional" public health

MICHIGAN STATE
U N I V E R S I T Y

The Quality Improvement Cycle (PDSA)

Act   Plan

Study   Do

MICHIGAN STATE
UNIVERSITY

One model for integrated disease management

Utilization Management

Case Management

Demand Management

Health Promotion

Disease Management

Source: Duncan-Jackson, 2001

MICHIGAN STATE
UNIVERSITY

Disease management program components

➢ Data analysis and planning
➢ Evidence-based guidelines
➢ Population identification
➢ Registries
➢ Population stratification
➢ Interventions
➢ Outcome measurement and reporting

MICHIGAN STATE
U N I V E R S I T Y

Data analysis and program planning

➢ Identify high-cost, high-frequency diagnoses
➢ Amenable to intervention?
➢ Evidence-based guidelines?
➢ Sufficient resources ($$, program administration staff, case management, IT)?
➢ Organizational commitment?
➢ Goals: Measurable? Realistic? Attainable within an acceptable time frame?

MICHIGAN STATE
U N I V E R S I T Y

Program design: opt-in/opt-out

Opt-in:

Eligible patients choose to receive disease management services and must take action (enroll) to participate in a program

Opt-out:

Eligible patients are assumed to be enrolled in a program unless they actively opt out (decline to participate)

MICHIGAN STATE
U N I V E R S I T Y

Evidence-based guidelines

➤ Help to define care expectations based on evidence
➤ Are used to develop interventions and outcomes measures
➤ Reduce variation
➤ May reduce medicolegal risk
➤ Include clinical practice guidelines, clinical paths, algorithms, and pharmacy guidelines

MICHIGAN STATE
U N I V E R S I T Y

Population identification

➢ Systematic, criteria-based
➢ Potential program referral sources:
  • Claims/encounters
  • Risk assessments
  • Provider referrals
  • Pharmacy data
  • Case management
  • Patients and families
  • Employers
➢ Add to this list as new sources become available

MICHIGAN STATE
U N I V E R S I T Y

Registries

➢ Registry = database
  • Lists all eligible and enrolled patients
  • Tracks patient status (stratification, recommended services, interventions, outcomes)
  • May be very simple or extremely complex
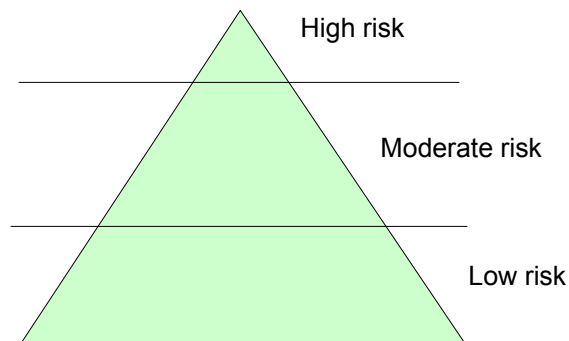 • Links - outcomes/profiling/incentives

MICHIGAN STATE
U N I V E R S I T Y

Stratification

➢ Divides the population into segments
➢ Why stratify?
  • Prioritize scarce resources
  • *Systematically* classify patients according to severity or other criteria
  • Data-driven approach
➢ Generally consistent with the Pareto Principle
➢ *Dynamic* - may change as a client's condition changes

MICHIGAN STATE
UNIVERSITY

Population stratification - schematic

High risk

Moderate risk

Low risk

MICHIGAN STATE
UNIVERSITY

Stratification levels based on:

- Severity/risk
- Predictive modeling
- Health status
- Comorbidities/complexity

Note: all require information…data!

MICHIGAN STATE
UNIVERSITY

What about predictive models?

- Mathematical models
  - "regression to the mean"
- Most often proprietary
- Prediction time frame generally 12 months
- Highly dependent on data integrity
- Age/gender/risk adjusted
- How are these models helpful?
  - Stratification
  - Resource allocation

MICHIGAN STATE
UNIVERSITY

Stratification and intervention – science and art

- The *science:*
  - Dividing the population into manageable subsets (stratification levels) using applied data analysis, predictive models, etc.
  - Identifying and applying evidence-based interventions within each stratification level
- The *art:*
  - Knowing and understanding the population
  - Effectively distributing available resources
  - Being willing to try something new

MICHIGAN STATE
UNIVERSITY

Interventions

- Based on evidence – what works in similar settings/populations
  - Research/RCTs desirable; often not available
  - "evidence" is not limited to formal research
- Vary according to stratification level
- Appropriate for the population
  - Consider SES, literacy level, culture, race/ethnicity, etc.
- Include: mailings, reminders, web/email, group visits, community intervention, telephone outreach, case management, remote monitoring, etc.

MICHIGAN STATE
UNIVERSITY

Identifying interventions

- "Benchmarking"
- Literature searches
  - Studies/published research
    - ✓ Quantitative (e.g., RCTs)
    - ✓ Qualitative (e.g., focus groups)
- Networking

MICHIGAN STATE
UNIVERSITY

Implementing interventions

- Full-scale implementation of interventions that have been shown to work
- Test interventions that you think might work
  - Pilot studies
  - Demonstration projects
- "Analysis paralysis"

MICHIGAN STATE
UNIVERSITY

Measuring outcomes

- Population-based measurements – relevant indicators
- Must be quantifiable
- Participation rates – active and passive
- Standardized measures of performance (e.g., HEDIS)
- Do the indicators relate to the problem??
- Evaluating impact – "reasonableness"

MICHIGAN STATE
UNIVERSITY

Establishing measures

- Types of measures
  - Structure – framework
  - Process – processes of care
  - Outcome – end result
- Clinical value compass*
  - Clinical Plan…
  - Utilization
  - Well-being Plan…
  - Satisfaction

* Nelson, E.C., et. al (1996). Improving Health Care, Part 1: The Clinical Value Compass. Journal on Quality Improvement; 22(4), 243-258.

MICHIGAN STATE
UNIVERSITY

What about ROI?

➢ Measure of gross savings
➢ Expected by purchasers; asked for in RFIs
➢ Quantifies all aspects of program expenditures and savings
➢ Difficult to measure long-term direct and indirect benefits – easy to "game"
➢ No standard methodology

MICHIGAN STATE
U N I V E R S I T Y

Example: Congestive Heart Failure

➢ *Clinical*: Rx rate (beta blockers, ACEI/ARB), New York Heart Class, ACC classification, ejection fraction
➢ *Utilization*: admissions/1000, days/1000, ALOS, IP, ER, ROI
➢ *Satisfaction*: patient/practitioner
➢ *Well-being*: SF-36, Minnesota Living with Heart Failure Questionnaire ±

± University of Minnesota

MICHIGAN STATE
U N I V E R S I T Y

Data collection

> Data sources
> - ✓ Administrative
>   - • Coding issues
>   - • Claims/encounters
>   - • Lab data
>   - • Other sources
> - ✓ Medical record
> - ✓ "Hybrid"

MICHIGAN STATE
U N I V E R S I T Y

Analysis – are data…

> Meaningful?
> Reliable?
> Population-based?
> Reasonable?
> Accessible over time?

MICHIGAN STATE
U N I V E R S I T Y

Analysis –drives program decisions…

- May revise program after considering findings from analysis
- Examples of possible actions:
  - Intervention was effective and practical:
    - ✓ implement system-wide
  - Intervention was somewhat effective:
    - ✓ modify and re-test
  - Intervention didn't work:
    - ✓ cut your losses and try something else!
    - ✓ "failures" provide valuable information

MICHIGAN STATE
U N I V E R S I T Y

Steps to build a comprehensive disease management program

- Data review/analysis
- Identify condition for program development
  - Supported by guideline? Amenable to intervention?
- Convene stakeholders
- Define the population/selection criteria
- Define outcome measures/methodology
- Stratify population
- Develop and implement interventions
- Measure outcomes - report - and continue……….

MICHIGAN STATE
U N I V E R S I T Y

Thought process – building a disease management program

➢ Population – who should we include?
➢ How will we identify eligible clients?
➢ What guidelines will we use?
➢ What indicators will we establish?
➢ How will we track the population?
➢ How will we measure?
➢ What data will we need, and how often?
➢ Who needs to be involved?
➢ How will we identify interventions?
➢ How will we analyze and report?

MICHIGAN STATE
U N I V E R S I T Y

Barriers to success

➢ No $$
➢ Low organizational priority
➢ Analysis paralysis; perfectionism
➢ Politics
➢ Utilization review, benefit restrictions
➢ Lack of IT support
➢ Lack of integration and communication
➢ Lack of buy-in

MICHIGAN STATE
U N I V E R S I T Y

Questions and discussion

Disease management resources

- Disease Management Association of America (www.dmaa.org)
- Improving Chronic Illness Care (RWJ) (www.improvingchroniccare.org)
- Medicaid Disease Management and Health Outcomes (www.dmnow.org)
- Institute for Health Care Studies (www.ihcs.msu.edu)